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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,449	07/31/2003	Lynn Bich-Quy Le	1229.0001	3797

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EXAMINER	
KRAUSE, JUSTIN MITCHELL	
ART UNIT	**PAPER NUMBER**
3682	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/632,449	LE ET AL.	
	Examiner	Art Unit	
	Justin Krause	3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-21 and 31-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15,17-21 and 31-37,39* is/are rejected.

7)☒ Claim(s) *16 and 38* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to because applicant alleges figure 3 is a closer more detailed view of figure 2, however examination of figures 2 and 3 reveal significant discrepancies. Some examples include but are not limited to:

Figure 2 shows the thrust plate secured by some type of threaded fastener, figure 3 does not.

Figure 3 appears to show the thrust plate and shaft as a monolithic body, figure 2 clearly shows the thrust plate as a sleeve the shaft is inserted into.

Figure 2 shows grooves, the similar view of figure 3 does not show grooves.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the

remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 18-20, 31-36 and 39, are rejected under 35 U.S.C. 102(b) as being anticipated by Titcomb (US Patent 6,315,452).

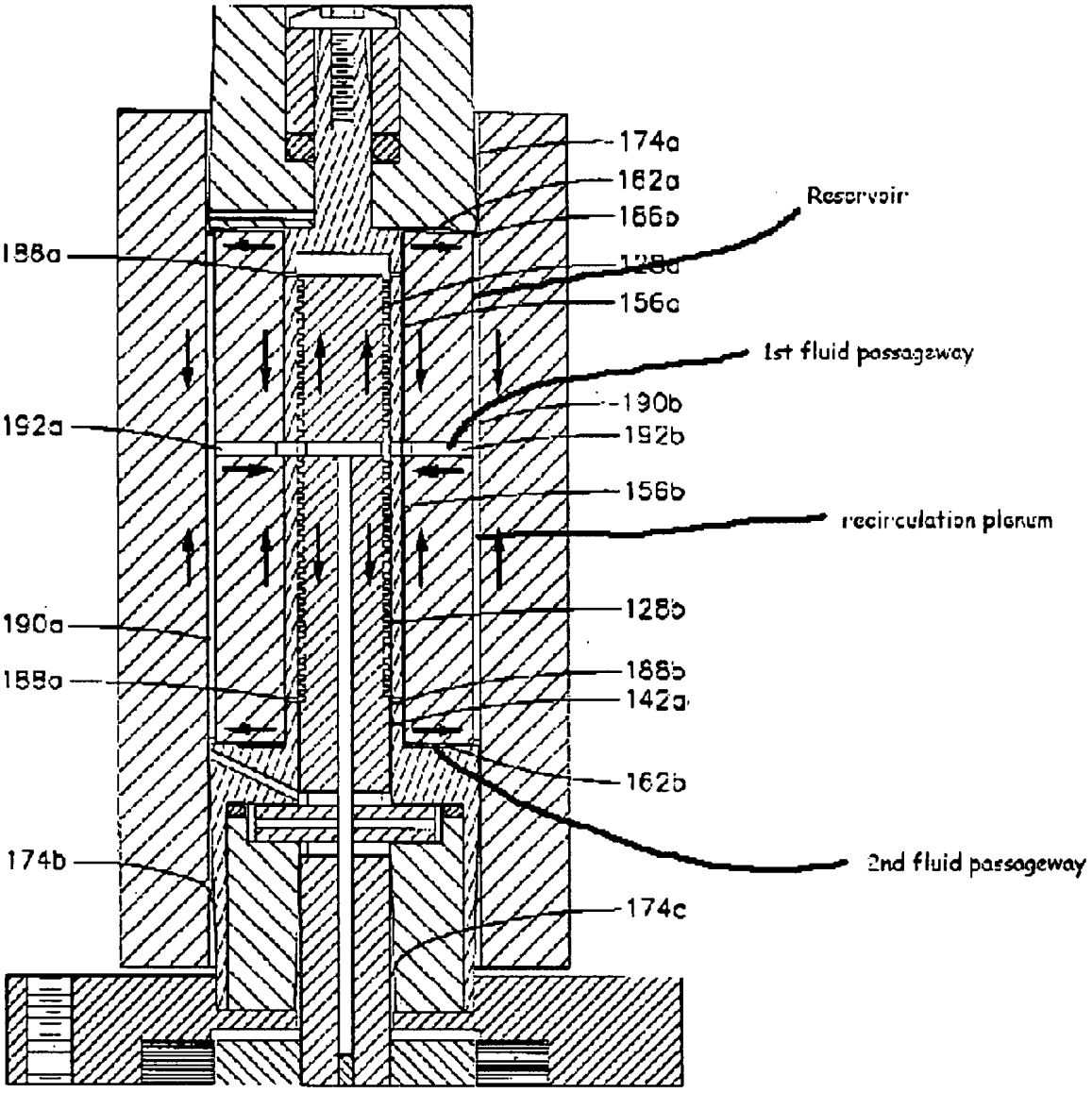
Titcomb discloses a hydrodynamic bearing assembly for use in combination with a spindle motor of a disc drive device comprising:

-a journal bearing (generally 156) defined between an inner component (112) and an outer component (146), which are positioned for relative rotation and define a portion of a stationary component and a rotatable component.

-a fluid recirculation passageway including a first fluid passageway (192) defined within the outer component and in fluid communication with a second fluid passageway

(162b), the second fluid passageway defined between the outer component and a radial member (158b) extending radially from the inner component, the first and second passageways in fluid communication with the journal at separate locations,

-a shield (160) affixed to the stationary component, defining a reservoir (190) with the outer component, and a recirculation plenum is defined by a junction joining the reservoir, the first fluid passageway and the second fluid passageway, and means for sealing the reservoir.



Regarding claim 31, the inner component is a shaft, the outer component is a sleeve.

Regarding claim 32, the first fluid passageway is defined through a sleeve (146).

Regarding claim 33, the second fluid passageway is defined between the outer component and the thrust plate.

Regarding claim 34, the device comprises means for creating an asymmetric pressure gradient within the fluid recirculation passageway (see fig 7), circulating fluid and purging air in the fluid, wherein the fluid circulates about a substantial portion of the journal, the first fluid passageway and the second fluid passageway (see figure 3).

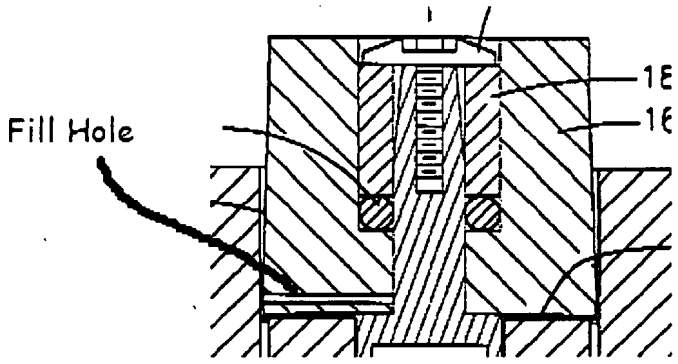
Regarding claim 35, the shield and outer component form adjacent surfaces, the adjacent surfaces are relatively tapered (creating gap 174a) and converge toward the recirculation plenum.

Regarding claim 36, the use of the shield as a travel limiter is an intended use or function of previously claimed structure and does not further limit the structure of the device (see MPEP 2114), however the examiner notes that in the device of Titcomb, the shield is capable of being a travel limiter for the outer component.

Regarding claim 39, a variable journal bearing gap is disclosed and is radially wider (see fig 2d) substantially adjacent to a journal plenum as compared to the remainder of the journal bearing, wherein the journal plenum is defined at a joining position of the first fluid passageway and the journal bearing.

Regarding claim 18, Figures 9 and 10 disclose alternative embodiments with axial channels (212a, 220a) on at least a portion of an inner surface of the shield, extending from the recirculation plenum and along the reservoir.

Regarding claim 19, a fill hole (see fig below) is defined within the shield, wherein a meniscus is positioned between the fill hole and the fluid in the reservoir, the fill hole making an angle with the surface of the shield.



Regarding claim 20, the inner component is affixed relative to a base and to a top cover plate, the outer component rotates relative to the inner component.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17, 21 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Titcomb.

Regarding claims 17 and 21, while Titcomb does not disclose the reservoir to hold up to 2.5 mg of fluid or that the engagement interface of the radial member with a base ranges from 3-5mm, the selection of dimensions is contingent on the size/scale of

the device and is a matter of suitability for the intended use, which is not in itself patentable.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the reservoir hold up to 2.5 mg of fluid and the interface of the base and radial member to be 3-5mm as a matter of suitability for the intended use of the design. A change in size or scale is generally recognized as being within the level of ordinary skill in the art. *In Re Rose, 105 USPQ 237 (CCPA 1955).*

Regarding claim 37, Titcomb discloses a grooving pattern with asymmetric grooves, however does not provide any criticality that the grooving pattern must be asymmetric.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the grooving pattern of dimensions suitable for the desired fluid flow characteristics needed for the use of the device, including symmetric grooving.

Allowable Subject Matter

Claims 16 and 38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed December 4, 2006 have been fully considered but they are not persuasive.

In response to applicant's argument that figure 3 shows a closer more detailed view of figure 2, figure 3 must also show the same structure as that which is illustrated in figure 2. If applicant contends that figure 3 shows the same bearing as the one shown in figure 2, then new drawings should be submitted which show the same structure, and the details. In the current drawings, figure 3 is an improper view of figure 2, as the plane through which the cutaway occurs shifts throughout the drawing figure.

Applicant argues that Titcomb does not disclose a reservoir, a recirculation plenum or a shield. The examiner disagrees. Applicant provides a definition of a reservoir as "a receptacle of chamber for holding a liquid or fluid" (Applicant's Response dated Dec. 4, 2006, page 14). Under this definition, the entire passage system would be a reservoir, since all of the passages are a chamber for holding fluid. Therefore any portion of the passage system is a reservoir.

Regarding the recirculation plenum, Merriam-Websters Collegiate Dictionary, 10th edition, defines a plenum as, "a space, every part of which is full of matter". The recirculation passage is full of fluid, therefore the recirculation plenum as shown above satisfies the claim limitation.

Regarding the shield, Merriam-Websters Collegiate Dictionary, 10th edition, defines a shield as "a device or part which serves as a protective cover or barrier". The shield, as illustrated above, serves as a barrier, preventing foreign matter from getting into bearing.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Krause whose telephone number is 571-272-3012. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMK
5/3/07
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Thomas R. Hannon
Primary Examiner